



Oversight Procedure 35 – ADA Review (Level Boarding for Commuter Rail)

1.0 PURPOSE

The purpose of this Oversight Procedure is to describe the review, analysis, recommendation procedures and reporting requirements expected by Federal Transit Administration (FTA) from the Project Management Oversight Contractor (PMOC) regarding Grantees' compliance with the level boarding provisions of the regulations issued by the U.S. Department of Transportation implementing the transportation provisions of the Americans with Disabilities Act (ADA) of 1990 (49 CFR Parts 27, 37 & 38).

2.0 BACKGROUND

The intent of level boarding is to provide equal and non-segregated access to passengers with disabilities using public transit systems. The term "level boarding" refers to station platforms that are coordinated with the level of the floor and the entry doors of railcars used on the system. It does not connote a specific measurement above top of rail (ATR). However, typical passenger car floor heights usually range from 17.5-inches ATR to 52-inches ATR. To achieve level boarding, platforms should be constructed approximately 3 inches below the floor level of a new rail car so that after application of the car load, normal wear on wheels and track beds, and dynamic tolerances, the platform is approximately level with the car entry floor.

The ADA gap standards are 3 inches horizontally and 5/8 inches vertically. It is recognized that these standards can be difficult to achieve and maintain due to the dynamic clearance requirements of standard freight and passenger railcars, track wear and settling, changes in wheel size due to wheel-truing, and suspension settling. Gaps that are slightly wider or higher than the standards can be easily crossed by ambulatory passengers without hazard, and spanned by short bridge plates when necessary. The Department of Transportation Guidance from September 1, 2005 states:

"In the Department's ADA regulations (49 CFR Part 37, Appendix A, §10.3.1(9)), level boarding is defined as involving a horizontal gap of no more than three inches and a vertical gap of no more than 5/8 inches (1.5 inches for existing vehicles operating in new stations). . . In situations where meeting gap requirements is infeasible, commuter and intercity rail operators still may often be able to provide full-length, level-entry boarding to all accessible cars of trains by using a high-level platform in conjunction with short bridge plates that provide access to each car. If this approach is feasible, it should be the option of choice."¹

¹ Full-Length, Level-Boarding Platforms in New Commuter and Intercity Rail Stations, DOT, DISABILITY LAW GUIDANCE, September 1, 2005, http://www.fta.dot.gov/civilrights/ada/civil_rights_3890.html accessed April 13, 2009.

Since topography and other existing site conditions can impact achievement of level boarding on a project, it is critical that the Grantee consider level boarding when selecting station locations in its preferred alternative. Grantees should not plan or design station platforms with horizontal curves greater than 1 degree 40 minutes since large gaps result between the platform and car, making achievement of level boarding extremely difficult. Station platforms should be constructed on tangent track. The design and environmental documents and project narratives submitted by the Grantee as part of the request for entry to preliminary engineering should describe the intended design for level boarding.

The planning and design documents for commuter rail systems that will share station platforms and tracks with other passenger rail services (e.g. intercity, Amtrak, other commuter rail, and high speed), should show level boarding accommodation of the various railroad users. Station platform heights should be set for the rolling stock with the lowest floor and entry height to avoid passengers stepping down from the platform into any car. Shared use can make unique platform designs necessary to achieve level boarding at particular stations. Special requirements may also apply in cases of shared right-of-way and track in Federally-designated high-speed rail corridors.

The planning and design documents for commuter rail systems that will share track with freight rail services, regardless of whether the freight railroad owns, controls, or simply uses the railroad, should reflect the Grantee's consideration of the actual historical use of the railroad. For the line in question, the Grantee is expected to know from an historical point of view, the frequency and nature of freight movements, the dimension (normal and over-dimension) of freight loads, the dynamic clearance requirements for the freight cars and freight carried, as well as whether the route is part of the U.S. Department of Defense Strategic Rail Corridor Network. Where an actual conflict exists with a specific station platform height, care should be taken to determine whether a lower platform height corresponding with a lower floor car would achieve level boarding. It is critical to understand that the presence of freight traffic, in and of itself, does not constitute infeasibility of level boarding.

In cases where there are concerns about accommodating freight trains (including over-dimensional loads) through commuter or intercity rail stations, commuter and intercity rail operators should employ solutions that accommodate both types of traffic in the presence of full-length high-level platforms, such as gauntlet or bypass tracks, unless doing so is technically or operationally infeasible."

The Department of Transportation Guidance from September 1, 2005 states if the short bridgeplate approach to achieving level boarding is infeasible, "then another solution permitting access to all cars of the train should be employed (e.g., car-borne or station-based lifts serving each accessible car). This approach, while less desirable operationally and as a matter of passenger service, still permits fully integrated service to the train.

3.0 OBJECTIVES

The objective of this review is to ensure compliance with the level boarding provisions of the DOT regulations implementing the ADA.

4.0 REFERENCES

The following are the principal, but by no means the only, references to Federal legislation, regulation and guidance with which the PMOC should have a good understanding as related to the Grantee's project work being reviewed under this OP:

4.1 Regulations

49 CFR Parts 27, 37 & 38: U.S. Department of Transportation regulations implementing the transportation provisions of the ADA (http://www.fta.dot.gov/civilrights/ada/civil_rights_5936.html). Important to the design of transit stations are paragraphs 206.3 regarding the location of accessible routes relative to general circulation paths, and 810.5.3 regarding the coordination of platform and rail car door height. Paragraph 810.5.3 also contains language correcting a misunderstanding of 49 CFR 38.71(b) (2) concerning light rail.

4.2 Guidance

The Department of Transportation issued Disability Law Guidance, Full-Length, Level-Boarding Platforms in New Commuter and Intercity Rail Stations on September 1, 2005 (http://www.fta.dot.gov/civilrights/ada/civil_rights_3890.html).

4.3 Reference Documents

- Federal Railroad Administration document dated March 7, 2006, Factors Associated with Railroad Passenger Car Clearances to High Platforms for Intercity and Commuter Rail Systems
<http://www.regulations.gov/fdmspublic/ContentViewer?objectId=09000064802bff3f&disposition=attachment&contentType=pdf> This document describes real world conditions that can preclude achieving and maintaining required maximum horizontal and vertical gaps between rail cars and platforms. The FRA submitted this document to the rulemaking docket for the Department's February 27, 2006 Notice of Proposed Rulemaking (NPRM) to update requirements under its ADA regulations;
- Map of existing Amtrak equipment type by route (Appendix C below);
- Association of American Railroads (AAR) Manual of Standards and Recommended Practices – Plate E – Clearance diagram that defines the clearance envelopes for limited interchange service;
- AAR Manual of Standards and Recommended Practices – Plate L – Locomotive Diagram for Interchange Service. (Diagram defines the clearance envelopes for freight locomotives intended for interchange service);
- U.S. Department of Defense Strategic Rail Corridor Network (STRACNET) clearance envelope diagram.

5.0 GRANTEE SUBMITTALS

Obtain the Grantee's package of materials documenting its achievement of level boarding. This package should be initially reviewed with the request to enter preliminary engineering. Forward copies of this package to DOT's Level Boarding Team (contact information provided below.) The package should include the following at a minimum:

- Cover letter;
- Answers to FTA Request for Information (see Appendix B);
- Site plans and station plans, sections, elevations, showing the level boarding design for each station (i.e., potential for a bridge plate or other device to span horizontal and/or vertical gap to meet level boarding requirements, potential for gauntlet track or bypass track, etc.); rationale for the proposed design and alternative designs;
- Document in writing for each station, the proposed right-of-way width, the horizontal and vertical gap dimensions between platform and vehicle.

6.0 SCOPE OF WORK

6.1 Prior to approval to Enter Preliminary Engineering

The PMOC is to verify and assess the planning for level boarding as part of the selection of the preferred alternative. It is essential and expected that the Grantee will reflect level boarding design in the site plans, station plans, and sections developed during the selection of alternatives and conceptual engineering, and as submitted with the request for entry to preliminary engineering.

The PMOC should notify FTA immediately if the level boarding design does not seem to comply with the DOT regulations. The PMOC's review is meant to bring to light as early as possible perceived impediments to compliance, and to serve as a platform for the generation of ideas and recommendations for removal of impediments so that compliance can be achieved. FTA may ask the PMOC to convene a workshop with the Grantee to review possible approaches to achieving level boarding, including changes to the vehicle under consideration.

The PMOC is expected to ensure that the Grantee considers all vehicle options and communicates with vehicle manufacturers about their designs, manufacturing processes and requirements for production. The PMOC is expected to ensure that the Grantee and vehicle manufacturers have developed realistic schedules; further, the PMOC is expected to ensure that opportunities to achieve level boarding are not inadvertently or arbitrarily foreclosed by the Grantee.

6.2 During Preliminary Engineering

The PMOC is to verify and assess the design for level boarding through review of the station site and building designs and the vehicle design. Acceptance of the proposed level boarding approach is required prior to FTA's approval of the project into final design. The PMOC should notify FTA immediately if the level boarding design does not seem to comply with the DOT regulations.

6.3 Final Design, FFGA, Construction, Revenue Operations

The PMOC should review the project plans and specifications that pertain to achieving level boarding, and conduct site visits during construction and revenue operations to verify compliance in the construction and operations.

6.4 General Information

Where subsequent events have resulted in a need to alter station plans in a manner that is likely to affect the ability of the project to achieve level boarding, the PMOC will notify FTA immediately upon learning of such information. Subsequent review by FTA program, legal, and civil rights staff may be necessary, and additional input from FRA and OST may be required.

6.4.1 DOT's Level Boarding Team

The Level Boarding Team can be a valuable resource to the Grantee. Failure to communicate with the Level Boarding Team can result in project delays (usually at the most inopportune time.) It includes representatives from OST, FTA and FRA listed below. The first point of contact is the FTA Office of Civil Rights (202) 366-6161.

- OST - Asst. General Counsel Regulation/Enforcement, Office of General Counsel
- FTA -
 - Director, Office of Civil Rights
 - Chief Counsel, Office of Chief Counsel
 - Associate Administrator, Office of Program Management
 - Associate Administrator, Office of Planning & Environment
- FRA –
 - Program Manager, Railroad Operations, Office of Railroad Development
 - Program Manager, Environmental Programs, Office of Railroad Development
 - Associate Administrator, Office of Railroad Development

7.0 REPORT, PRESENTATION, RECONCILIATION

The PMOC shall provide FTA with a written report of its findings, analysis, recommendations, professional opinions, and a description of the review activities undertaken. After FTA approval, the PMOC should share the report with the Grantee.

The report formatting requirements of OP 01 apply. When necessary, PMOC shall perform data analysis and develop data models that meet FTA requirements using Microsoft Office products such as Excel and Word and use FTA-templates when provided. The PMOC may add other software as required but documentation and report data shall be made available to FTA.

APPENDIX A

Acceptable Quality Level

	DESIRED OUTCOME	PERFORMANCE REQUIREMENT	CHECK LIST	ACCEPTABLE QUALITY LEVEL	PERFORMANCE MEASURE	MONITORING METHOD
1	PMOC shall review, analyze and recommend to FTA regarding commuter rail project compliance with Level Boarding Requirements of ADA.	R1a. The PMOC shall develop and document a process for review and analysis of Grantee's Level Boarding Provisions.		Q1a. Process exists and has been followed.	M1a. Evidence of a documented process.	MM1a. Periodic review by FTA or its agent.
		R1b. The PMOC shall use its process to analyze the level of compliance with ADA Level Boarding and assist in bringing non-compliant projects into compliance.		Q1b. Review must be made and the PMOC provides internal verification that the process as documented was followed.	M1b. Documented assessment of project compliance with Level Boarding Provisions of ADA and assistance in curing non-compliance.	MM1b. Periodic review by FTA or its agent.
2	The PMOC shall assist Project Sponsor through review of Level Boarding Package and other documents in satisfying ADA Level Boarding requirements.	R2a. The PMOC shall request and review all appropriate project submittals, including the Level Boarding Package, and analyze for compliance with ADA Level Boarding.		Q2a. Professional opinion of Level Boarding Package and other supporting documentation.	M2a. Documented evidence of a thorough review by PMOC of the Level Boarding Proposal and Package and other pertinent documents, supported by professional opinion.	MM2a. Periodic review by FTA or its agent.
		R2b. Prior to PE: The PMOC shall verify and assess the planning for level boarding as part of preferred alternative process and that level boarding design is reflected in submittals for entry into Preliminary Engineering.		Q2b. Professional opinion and review of level boarding planning and presence of level boarding in PE submittals.	M2b. Documented evidence of verification and assessment of planning for level boarding and reflection of level boarding in PE submittals, supported by professional opinion.	MM2b. Periodic review by FTA or its agent.
		R2c. During PE: The PMOC shall verify and assess the design for level boarding through review of station and vehicle design, and shall notify FTA immediately if, in its opinion, the level boarding design does not comply with applicable DOT regulations.		Q2c. Professional opinion and evaluation of station and vehicle designs for level boarding compliance.	M2c. Documented evidence during PE of verification and assessment of station and vehicle designs for level boarding, supported by professional opinion.	MM2c. Periodic review by FTA or its agent.
		R2d. After Entry into FD: The PMOC shall, after entry into FD and through Revenue Operations, review project plans and specifications pertaining to level boarding and conduct site visits during construction and revenue operations to verify compliance with level boarding.		Q2d. Professional opinion, review of documents and site visits, as required.	M2d. Documented evidence after entry into FD of review of plans and specifications and necessary site visits, supported by professional opinion.	MM2d. Periodic review by FTA or its agent.
		R2e. The PMOC shall institute and maintain communications with DOT's Level Boarding Team to avoid project delays and to assist in identification and resolution of level boarding issues.		Q2e. Professional opinion and communications with the Level Boarding Team.	M2e. Documented evidence of communications with the Level Boarding Team, supported by professional opinion.	MM2e. Periodic review by FTA or its agent.
3	The PMOC shall document its findings, professional opinions, and recommendations in a report to the FTA.	R3. The PMOC shall present its findings, conclusions, analysis and recommendations to FTA and, after FTA approval, reconcile those recommendations with the Grantee to the extent possible when so directed by FTA.		Q3. Reports and presentations are professional, clear, concise, and well written. The findings and conclusions have been reconciled with other PMOC reports and have been reconciled with Grantee to the extent possible.	M3. PMOC's findings conclusions, recommendations, and presentation.	MM3. Periodic review by FTA or its agent.

APPENDIX B

FTA Request for Information

To support compliance with DOT ADA Regulation for Level Boarding, dated January 19, 2007, revised September 11, 2007

1) Train Route / Service / Operations

a) MAP

- i) On maps of the alignment, indicate the existing and proposed routes for each below.
 - (1) Commuter rail
 - (2) Normally-wide freight
 - (3) Over Dimensional (OD) freight
 - (4) Amtrak
- ii) Identify which components of the guideway, stations, and support facilities are included in this project.
- iii) Identify interconnections between the commuter rail's, Amtrak's (where applicable) and the freight railroad's tracks and local industries served by the freight railroad.
- iv) Identify where tracks will be shared among commuter rail, Amtrak, and/or freight traffic
- v) Identify which stations/platforms are to be shared by commuter rail and Amtrak.
- vi) Identify the location of the storage yard and service facility on the map.

b) TABLE – Indicate the number of anticipated trains per day of each type, time periods, headways, etc.

- i) Commuter rail
- ii) Normally-wide freight
- iii) OD freight
- iv) Amtrak

c) MODEL – Model the train service for the commuter rail and freight railroad service and verify that the desired service levels can operate on the existing or proposed track configuration.

d) LOGS – Provide copy of actual logs showing the number of OD freight trains per year for past ten years. Indicate the commodity carried in these vehicles and actual width of freight carried.

2) Land, ROW, Easements, Other Agreements

a) AGREEMENTS – Describe the proposed agreement or preferably provide a draft of the agreement between the commuter rail agency and the freight railroad explaining the terms regarding

i) Land ownership or lease, for example:

- (1) Will the commuter rail agency purchase the right-of-way from the freight railroad?
- (2) Will the commuter rail pay the freight railroad to operate on its tracks?
- (3) What are the terms of the operating agreements between the commuter and freight railroad?

- (4) What rights does the freight railroad retain to operate normally wide and over-wide loads?
- ii) Responsibility for track, signal, station, support facility, and vehicle construction
- iii) Responsibility for land, track, signal, station, support facility, vehicle maintenance and operations

3) Passenger Vehicles

- a) Describe the commuter rail consist – number and type of cars (new and existing).
- b) For each car in the commuter rail and the Amtrak consist (where applicable), provide
 - i) Manufacturer name, model, year built
 - ii) floor height above top of rail at the vehicle entry points
 - iii) floor plan drawing of car including seating layout
- c) For new cars, provide a table to illustrate the alternative passenger car manufacturers, styles, and floor heights that have been considered
- d) For the commuter rail and the Amtrak vehicles (where applicable), based on shimming or automatic leveling, calculate
 - i) The maximum possible change in the vertical dimension from top of rail to the floor height due to wheel wear (new to condemned condition.)
 - ii) the vehicle widths both static and dynamic (vehicle in motion) from track centerline at 0 to 51-inches above top of rail
- e) For each type of commuter rail vehicle, indicate the number of wheelchair spaces to be provided.

4) Clearance Requirements; Expected Design, Construction, and Maintenance Tolerances

- a) Provide the actual dynamic clearance requirements, based on a representative sampling of freight loads (normally-wide and overly-wide if any) to fixed obstructions (such as platform) for the following vehicles in motion. Differentiate between the load being carried and the vehicle carrying, indicate horizontal clearances from track centerline and vertical clearances from top of rail at all levels between 0" ATR and 51" ATR. Note that actual vehicle dynamic clearances may differ significantly from railroad setback standards for fixed obstructions.
 - i) Commuter rail vehicles
 - ii) Amtrak vehicles
 - iii) Freight railroad's normally-wide vehicles (specify which AAR plates A-F, H, L apply)
 - iv) Freight railroad's overly-wide (over-dimensioned -- OD) vehicles (if applicable provide dimensioned outline-drawings for each of these vehicles and the freight load being carried)
- b) Provide requirements for horizontal and vertical clearance to fixed obstructions stemming from other sources such as the commuter rail agency's operating agreements with freight railroad, state clearance requirements, etc., at all levels between 0" ATR and 51" ATR.
- c) Provide horizontal and vertical design, construction and maintenance tolerances to be expected for the commuter rail platform, track, and trackbed, at all levels between 0" ATR and 51" ATR. Indicate whether the track in the vicinity of passenger rail stations is or will be maintained to Class 4 standards; if not, describe existing and proposed class of track.

5) Stations/Platforms:

a) DRAWINGS

- i) Provide a dimensioned drawing of a typical commuter rail station platform including the proposed commuter rail consist along the platform.
- ii) Assuming that the track is to be shared by the commuter rail, Amtrak, and normally-wide freight vehicles, and given the dynamic clearances and tolerances required to accommodate these three (as described above), indicate where is the shortest possible horizontal dimension from track centerline to the face of a full-length platform that provides level boarding to the commuter rail vehicles? To the Amtrak vehicles (where applicable)? Provide clearances for all levels between 0" ATR and 51' ATR.
- iii) Generate design alternatives including gauntlet tracks, flip-up platform edges, etc., to accommodate OD freight service where it occurs along the commuter rail alignment.
- iv) Provide a site plan drawing for each station area, scaled at 1" = 40', indicating the path of travel from the public way, (public street and sidewalks, parking, and bus stops) for persons with disabilities as compared with persons without disabilities, to the station entrance and the commuter rail vehicle boarding areas

APPENDIX C

Map of Existing Amtrak Equipment by Route

